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Specification for

Access fittings for chimneys and other high structures in concrete or brickwork

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Committees responsible for this British Standard

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- Agricultural and Allied Workers' National Trade Group
- Agricultural Engineers' Association
- British Flue and Chimney Manufacturers' Association
- Building Employers' Confederation
- Department of Agriculture and Fisheries for Scotland
- Electronic Engineering Association
- Engineering Equipment and Materials Users' Association
- Health and Safety Executive
- Institution of Civil Engineers
- Institution of Structural Engineers
- National Federation of Master Steeplejacks and Lightning Conductor Engineers
- Refractory Contractors' Association
- Suspended Access Equipment Manufacturers' Association
- Union of Construction, Allied Trades and Technicians

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Foreword

This revision of this British Standard has been prepared under the direction of the Civil Engineering and Building Structures Standards Committee. It supersedes BS 3572:1962 which is withdrawn. This standard is complementary to BS 3678. For permanently fixed steel ladders, reference should be made to BS 4211.

The standard is only intended to cover suitable materials for the manufacture of fittings described in clause 1. Recommendations are made for the use of these fittings in appendices.

It is to be noted that better materials are now available for the manufacture of access fittings than some that have been previously used and materials specified in this standard are those that are felt to be the most suitable, but this is not necessarily to be taken as implying that others are completely unsatisfactory. Attention is drawn to the change in the specified thread form from Whitworth to M20 ISO coarse thread, medium fit, and to the recommended precautions.

It is recommended that the specifier, or his representative, be permitted access to where the fittings are made in order that he may examine and sample the materials and the finished fittings. Attention is drawn to the purchaser's right to require a certificate of compliance with this standard and to a possible reference to it in the contract between supplier and purchaser.

The provisions of this standard apply only to normal format bricks since the size and shape of the fittings preclude satisfactory use in thicker units such as concrete blocks.

To ensure to their satisfaction that products claimed to comply with this British Standard consistently achieve the required level of quality, purchasers ordering to this standard are advised to specify in their purchasing contract that the supplier operate a quality system in compliance with BS 5750.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Section 1. General

1 Scope

This British Standard specifies requirements for the following groups of fittings to provide means of access for inspection and maintenance by steeplejacks and similar trades who normally fit their own ladders.

- a) Sockets for embedding in concrete and brickwork.
- b) Cappings for sockets.
- c) Screw-in fittings, i.e. screw-in hooks and screw-in eyes.

The requirements specified for the fittings are in respect of materials, workmanship, design, construction and dimensions.

General recommendations on the methods of use of access fittings are given in Appendix A.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1

access fitting

a fitting provided to afford access up and down or around a chimney or other high structure, e.g. socket, capping, screw-in fitting or stepiron

2.2

socket

a metal unit that provides a threaded hole to receive a screw-in fitting and is intended to be built into a chimney or other high structure

2.3

capping

a flanged plug intended to be screwed into a socket in order to protect the screw thread and the exposed face of the socket between periods of use

2.4

screw-in fitting

a detachable hook or eye that is intended to be secured by screwing into a socket

2.5

stepiron

a metal unit that is intended to be built into a chimney or other high structure to provide one of a series of permanent foot steps or hand holds spaced at suitable intervals

3 Material quality

All access fittings shall be made from material complying with the ingot tests of the respective British Standards, and when given a visual examination shall be free from surface defects of the exposed face of all fittings and flaws in the screwed thread of access sockets, hooks and eyes.

Section 2. Sockets for embedding in concrete

NOTE Recommendations on the methods of use of sockets for embedding in concrete are given in Appendix B.

4 Materials

Sockets for embedding in concrete shall be cast or wrought from one of the alloys given in Table 1.

Table 1 — Alloys for sockets

BS number	Material	Alloy designation
BS 1400	Nickel gunmetal	G3
BS 1400	87/7/3/3 leaded gunmetal	LG4
BS 1400	Aluminium bronze (copper-aluminum)	AB2
BS 2874	10 % aluminium bronze copper-aluminium-nickel-iron)	CA104
BS 3071	Nickel-copper (1 % silicon)	NA1
BS 3076	Nickel-copper	NA13 ^a
^a This alloy should preferably be used in the hot-rolled condition.		

5 Workmanship

Sockets shall be sound and free from laps, holes and sand pitting. Surfaces shall be clean, non-porous and free from sand. Sockets shall be neatly dressed and shall not be burned, stopped, patched or plugged.

A cross section shall be free from porosity, burning or blisters and shall have a homogeneous texture on visual examination.

NOTE Some guidance on examination of cross section is given in Appendix C.

6 Design

Sockets shall comply with the following.

- a) The shape of the socket shall be such that it will not rotate when in use.
- b) The socket, when embedded in concrete, shall provide anchorage without any reliance being placed on the bond between the concrete and the socket.

NOTE 1 Details of sockets which, when tested for anchorage in concrete, have proved satisfactory are shown in Figure 1.

- c) The section shall be such as to ensure full compaction all round when embedded in concrete.

NOTE 2 These requirements assume that the socket is built in flush with the face of the structure.

Every socket shall have cast recessed figures and letters 10 mm high as shown in Figure 1.

Every socket shall be provided with a capping that complies with section 4 of this British Standard.

7 Construction

If sockets consist of two or more parts (excluding back end plugs) the parts shall be bolted or screwed together.

NOTE It is preferable for sockets to be made in one piece.
The hole for the attachment of the screw-in hook or screw-in eye shall be of the dimensions specified in clause 8 and shall be threaded with an M20 ISO coarse thread, medium fit, complying with BS 3643-2.

If the hole is threaded right through the socket from front to back, a screwed plug made of the same material as the socket shall be inserted in the back end of the socket. The back end of the plug and of the socket shall be flush and the plug shall be secured in position by local deformation, e.g. by centre punching. If a separable flange is used for anchoring the socket, the flange and the screw plug shall be made in one piece.

8 Dimensions

The dimensions of the sockets shall be as follows.

- a) The clear depth of the hole shall be not less than 80 mm.
- b) The length of the thread provided to take the screw-in fittings shall be not less than 55 mm.
- c) The engagement of a screwed plug shall be not less than 25 mm.
- d) The minimum thickness of metal in the wall of the socket measured from the root of the thread shall be 12 mm.

9 Greasing

The exposed face of each socket shall be greased.